SANTA CRUZ BIOTECHNOLOGY, INC.

HD-PTP (F-4): sc-398711

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

HD-PTP (tyrosine-protein phosphatase non-receptor type 23, PTP-TD14) is a 1,636 amino acid protein encoded by the human gene PTPN23. HD-PTP belongs to the protein-tyrosine phosphatase family, non-receptor class subfamily. It contains one BRO1 domain, two TPR repeats and one tyrosine-protein phosphatase domain. The C-terminal region contains the PTP-like domain, whereas the N-terminal region contains the two TPR regions. These regions are homologous to the yeast protein, BRO1, which is involved in the mitogen-activated protein kinase signaling pathway. Similarly, HD-PTP is believed to act as a negative regulator of Ras-mediated mitogenic activity and is phosphorylated upon DNA damage, probably by ATM or ATR. HD-PTP protein is differentially modulated by two angiogenic growth factors. While vascular endothelial growth factor (VEGF) has no affect on protein levels, fibroblast growth factor-2 (FGF-2) induces HD-PTP degradation via the proteasome system.

REFERENCES

1. Cheng, J., et al. 1996. A novel protein tyrosine phosphatase expressed in $lin^{lo}CD34^{hi}Sca^{hi}$ hematopoietic progenitor cells. Blood 88: 1156-1167.
2. Cao, L., et al. 1998. A novel putative protein-tyrosine phosphatase contains a BRO1-like domain and suppresses Ha-Ras-mediated transformation. J. Biol. Chem. 273: 21077-21083.
3. Toyooka, S., et al. 2000. HD-PTP: a novel protein tyrosine phosphatase gene on human chromosome 3p21.3. Biochem. Biophys. Res. Commun. 278: 671-678.

CHROMOSOMAL LOCATION

Genetic locus: PTPN23 (human) mapping to 3p21.31; Ptpn23 (mouse) mapping to 9 F2.

SOURCE

HD-PTP (F-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 33-54 at the N-terminus of HD-PTP of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HD-PTP (F-4) is available conjugated to agarose (sc-398711 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398711 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398711 PE), fluorescein (sc-398711 FITC), Alexa Fluor® 488 (sc-398711 AF488), Alexa Fluor® 546 (sc-398711 AF546), Alexa Fluor® 594 (sc-398711 AF594) or Alexa Fluor® 647 (sc-398711 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398711 AF680) or Alexa Fluor® 790 (sc-398711 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398711 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

HD-PTP (F-4) is recommended for detection of HD-PTP of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HD-PTP siRNA (h): sc-62449, HD-PTP siRNA (m): sc-62450, HD-PTP shRNA Plasmid (h): sc-62449-SH, HD-PTP shRNA Plasmid (m): sc-62450-SH, HD-PTP shRNA (h) Lentiviral Particles: sc-62449-V and HD-PTP shRNA (m) Lentiviral Particles: sc-62450-V.

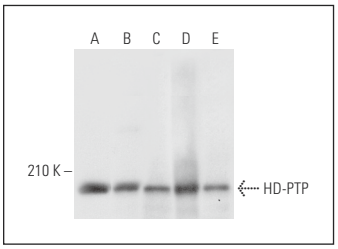
Molecular Weight of HD-PTP: 185 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-375 cell lysate: sc-3811 or Hep G2 cell lysate: sc-2227.

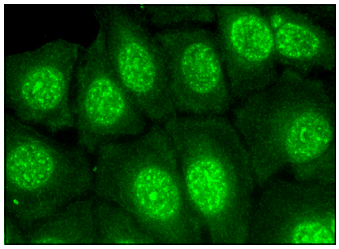
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



HD-PTP (F-4): sc-398711. Western blot analysis of HD-PTP expression in HeLa (**A**), A-375 (**B**) and Hep G2 (**C**) whole cell lysates, HeLa nuclear extract (**D**) and human liver tissue extract (**E**).



HD-PTP (F-4): sc-398711. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Budzinska, M.I., et al. 2020. PTPN23 binds the Dynein adaptor BICD1 and is required for endocytic sorting of neurotrophin receptors. J. Cell Sci. 133: jcs242412.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.